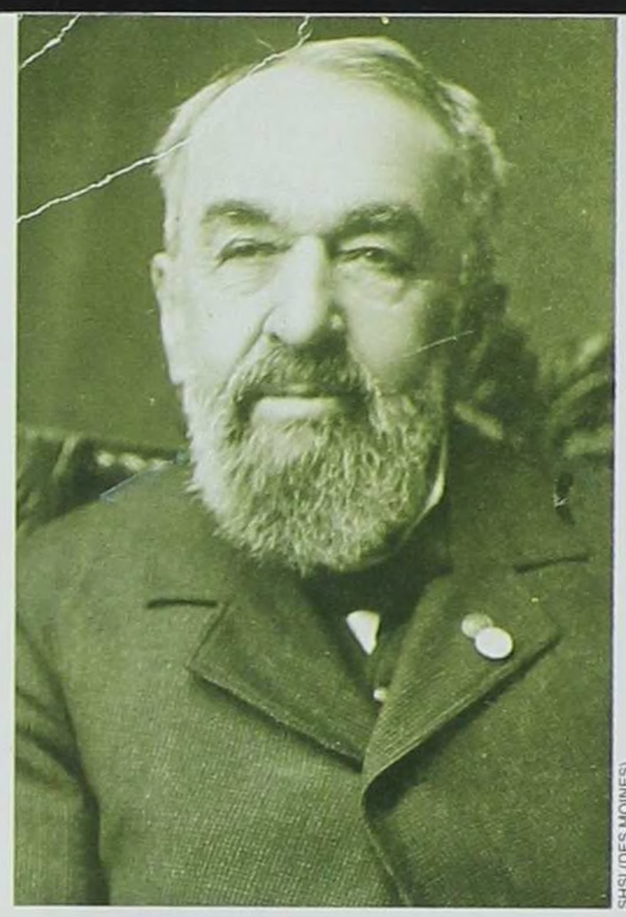
Lorenzo Coffin and Railroad Safety

by Tim Lane



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Lorenzo Coffin, 1823–1915

In Boone County there is a bridge named in honor of Kate Shelley, the 15-year-old who braved rising floodwaters to stop the midnight express. Yet there is no structure named for Lorenzo Coffin (a contemporary of Shelley's who resided one county north near Fort Dodge). Shelley was credited and lauded for saving hundreds from death and disability in one night's work. Coffin's numbers saved would be expressed as countless thousands. Shelley's effort was a dramatic Hollywood-style, cliff-hanging affair in which she crossed a railroad bridge despite flood and storm. Coffin's effort was a long, drawn-out, grass-roots measure to enact basic worksite safety for the rail industry that eventually became the standard for the nation.

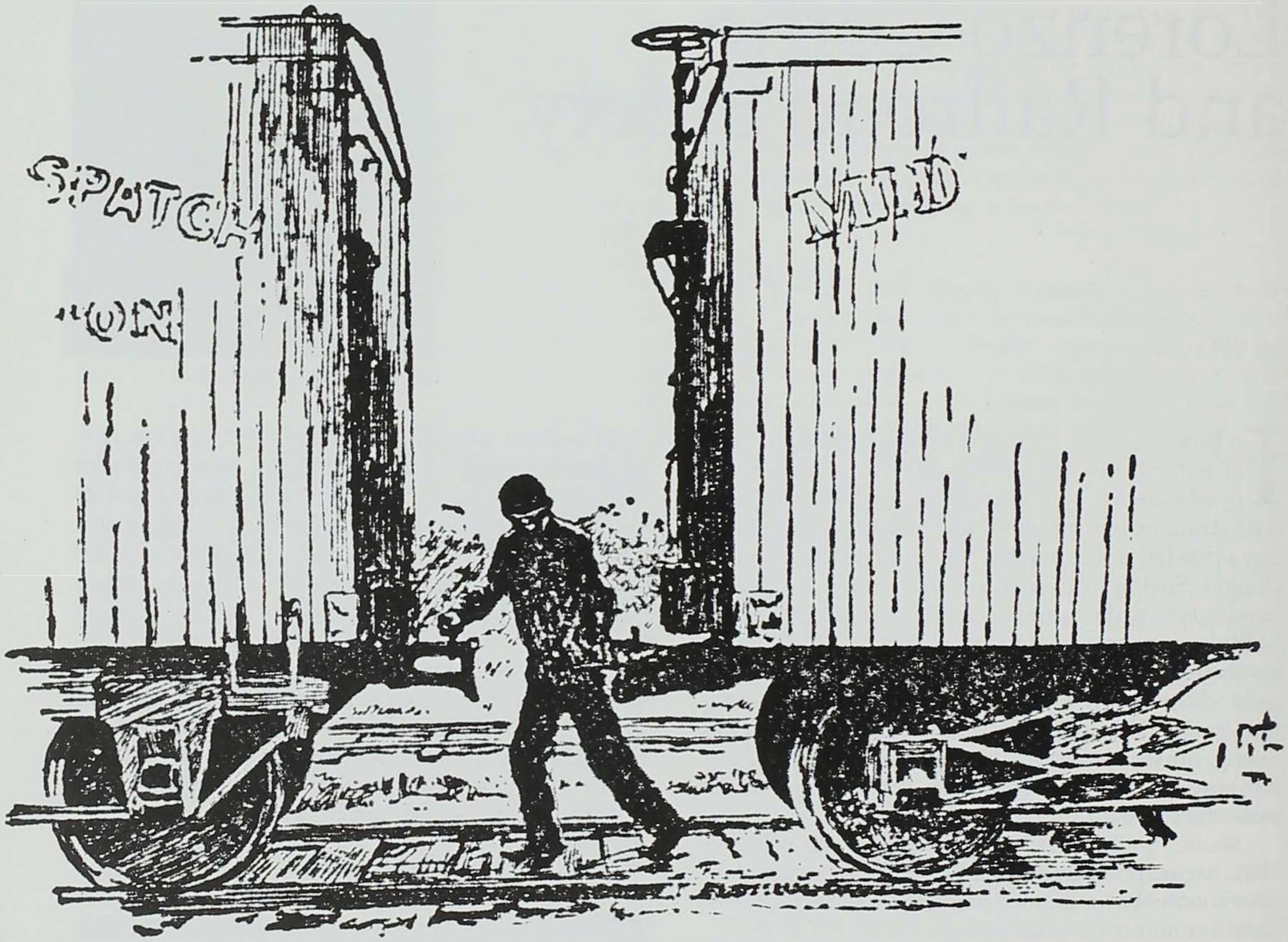
Shelley performed her high-bridge act on July 6, 1881. At that point Coffin had been rallying support for safer conditions for railroad workers for seven years and would continue for twelve more.

While traveling by rail in 1874, Coffin witnessed an accident when a brakeman attempted to manually hook a freight car to the train he was riding on. The task was far from simple or safe. The link-and-pin coupling method required the brakeman to drop a pin between two iron loops as they came together. On this particular morning the brakeman miscalculated and his right hand was caught between the two cars. Two fingers were instantly sheared off. Many of his fellow workers probably considered him lucky that he had only lost two fingers, given the daily hazards of railroad work; most injured workers were released without compensation.

At this point in his life, Coffin was 51, a minister, and a progressive farmer. That morning on the train he became a crusader. He initiated a one-man campaign to address the apathy of the public and the railroad regarding the appalling working conditions. Coffin was destined to become the nation's most ardent advocate for rail safety and reform.

In 1888 the Iowa Board of Railroad Commissioners reported 101 deaths and 564 injuries among railroad employees. Of those, 19 percent of the deaths and 43 percent of the injuries were incurred while coupling cars. Across the nation it was not unusual for 20,000 to 30,000 to be maimed or killed each year. Those figures are even more unfortunate when one realizes that the technology was already available to both couple and brake automatically. Eli Janney had by then patented an automatic coupler that locked like two hands clasping, and George Westinghouse had developed a prototype air brake designed to stop a train from controls in the locomotive. Railroad officials referred to the mechanized methods as impractical, which translates into too expensive.

Few industries have been as powerful as the U.S. railroads in the 19th century. If railroads wanted time zones, they got times zones. They owned senators, intimidated the press, and controlled commerce. But Coffin was relentless, speaking to local and national railroad workers' conventions, sending thousands of letters to newspapers across the country, and addressing religious organizations. In Iowa he became a railroad commissioner in 1883 and lobbied for demonstrations to test the effectiveness of air brakes. The only reason the railroads agreed to the tests was their belief that the tests would fail. The initial tests did fail, but he kept up his advocacy. In this case the third time was the charm. George Westinghouse used these tests and their initial failure to iron out design flaws and improve his system. In 1887 in a test conducted by the Master Car-Builders Association, the air brake was able to stop a 50-car train going 40 miles an hour on a long grade west of Burlington. Westinghouse's design and Coffin's persistence had won a battle, but not the war.



Manual braking and coupling of railroad cars were incredibly dangerous practices. Iowa's State Board of Health records noted with alarm the devastating rates of trainmen's injuries and deaths and called for reform.

Coffin next needed to write and enact a state railroad safety appliance act. In 1890, the Iowa legislature passed such a law, which would take effect in three stages, 1890 to 1895. In the spring of 1893 President Benjamin Harrison signed a federal railroad safety act into law. This act mandated air brakes and automatic couplers. President Harrison signed the bill and then presented the pen to Coffin.

Under the federal law, railroads had until 1901 to meet code for interstate train cars. That year in Iowa, coupling accidents fell from 51 pecent in 1878 to only 8 percent.

The advent of automatic coupling and air brakes put an end to thousands of needless deaths and injuries, but it didn't slow down Coffin. He continued crusading for various social reforms, from temperance, to YMCAs for railroad workers and rural residents, to more effective treatment for ex-convicts returning to society. ❖

Tim Lane is the Fitness Consultant and ICN Coordinator for the Iowa Department of Public Health. In that capacity he initiated FITnet, a daily e-mail publication that combines health and history. FITnet is delivered to hundreds of thousands of readers around the world every weekday.